

Applicant : Raymond Kurzweil  
Serial No. : 10/734,618  
Filed : December 12, 2003  
Page : 8 of 13

Attorney's Docket No.: 14202-006001

## REMARKS

### Claim Objections

The examiner objected to Claim 7 because of the following informalities: the claim recites: "the second physical location". However the only sounds claimed are coming in from the network, the sounds from a first location. It is not very clear whether the signal is to be coming from the location of the operator (location of the goggles) or of the robot."

Applicant has amended claim 6, from which claim 7 depends, to call for the second location, e.g. the location of the second robot.

### 35 U.S.C § 103

The examiner rejected Claims 1-7, 13-20, and 24-26 under 35 U.S.C. 103(a) as being unpatentable over Biocca et al., US 2002/0080094, in view of Yee, US 6,016,385.

The examiner stated:

(Claims 1, 3-7,14,15,17-20, 25) Biocca discloses a teleportal system to provide remote communication between two users, wherein in at a first location there is a camera capturing an image of a first physical location in which the camera is disposed ([0033]), and producing a first video image signal from the first captured image ([0033], [0038]); a processor that receives the first video image signal and morphs the first video image signal ([0037]-[0038]); an adapter to send the morphed first video image signal to a communications network (element 99) and receive a second video image signal from the communications network, the second video image signal of a second physical location (figure 1, [0035]); and a set of goggles to display the second video image of the second, different physical location (figure 9). Biocca does not disclose wherein the cameras are coupled to a mannequin. However, Yee teaches a robot system wherein an operator controls the robot and receives sensory information from the robot, including a camera coupled to the robot for receiving a video image (Figure 3, cameras 22), the camera sending the video image to a communication network (Figure 1), a processor for morphing the video image (column 5, lines 11-40), and the user having a set of goggles to display a morphed video image to the user (column 5, lines 11-37).

Yee further teaches the robot having tactile sensors positioned along the exterior of the robot (figure 6, column 6, lines 15-31), the sensors sending first tactile signals to the communications network (column 6, lines 15-31); the system further including a body suit having tactile actuators, the tactile actuators receiving second tactile signal from the communications network (column 8, lines 10-29). Yee further teaches motion sensors positioned throughout the body suit, the motion sensors sending first motion signals corresponding to movements of each sensor relative to a reference point (column 6, lines 47-58), the first motion signals transmitted to the communications network (column 3, lines 21-25); and a robot receiving from the communications network the motion signals from the motion sensors, the second motion signals from the motion sensors causing a movement of the robot that is

Applicant : Raymond Kurzweil  
Serial No. : 10/734,618  
Filed : December 12, 2003  
Page : 9 of 13

Attorney's Docket No.: 14202-006001

correlated to the movement of the body suit (column 3, lines 21-25, column 6, lines 31-46); wherein the robot includes motion actuators corresponding to the motion sensors, the motion actuators causing the robot to move (column 3, lines 21-25, column 7, lines 15-48). Yee further teaches wherein the robot comprises a body (figure 3) and a microphone coupled to the body, the microphone for sending audio signals, corresponding to sounds in the first physical location to the communications network (column 4, line 51-column 5, line 10); wherein the set of goggles further includes a transducer to render audio signals received from the communications network from sounds in the first physical location (column 4, line 51-column 5, line 10). Yee further teaches wherein the robot comprises a transmitter to wirelessly send the audio signals, the tactile signals, the motion signals and the video images to the communications network (antenna 30, figure 3).

Yee suggests the use of a humanoid robot would be beneficial because the robot can capture the environment of the robot location "exactly the same way that a human would sense the conditions, sends signals to the operator which the operator senses in exactly the same way as if he were to take the place of the robot" (column 1, lines 20-27). Further Biocca teaches that virtual environments and teleconferencing links support collaborative interaction between individuals in local and remote sites ([0006], [0010]).

Claim 1 is distinct over any purported combination of Biocca and Yee because the alleged combination neither describes nor suggests, the combination of the virtual reality encounter system of claim 1 including a ... camera coupled to the mannequin, the camera capturing an image of a first, physical location in which the mannequin is disposed, ... a processor that receives the first video image signal and morphs the first video image signal ... to send the morphed, first video image signal to a communications network and receive a second, video image signal from the communications network ... of a second, different physical location and a set of goggles to display the second video image ... .

With respect to claim 1, the examiner relies on Biocca to disclose: "... remote communication between two users, wherein in at a first location there is a camera capturing an image of a first physical location ... ." However, that is not the subject of claim 1. Claim 1 is directed to a virtual reality encounter system in which a ... camera that is coupled to the mannequin captures an image of a first, physical location in which the mannequin is disposed and in which the combination receives a second, video image signal of a second, different physical location using the set of goggles to display the second video image.

The examiner readily admits that Biocca does not disclose that the camera is coupled to a mannequin and relies on Yee. Biocca also does not disclose the mannequins per se, since Biocca is directed to a teleportal system, e.g., mere video conferencing.

The examiner argues that "Yee teaches a robot system wherein an operator controls the robot and receives sensory information from the robot, including a camera coupled to the robot for receiving a video image (Figure

Applicant : Raymond Kurzweil  
Serial No. : 10/734,618  
Filed : December 12, 2003  
Page : 10 of 13

Attorney's Docket No.: 14202-006001

3, cameras 22), the camera sending the video image to a communication network (Figure 1), a processor for morphing the video image (column 5, lines 11-40), and the user having a set of goggles to display a morphed video image to the user (column 5, lines 11-37).”

However, Yee while including a camera mounted on a robot; fails to suggest the processor that receives the first video image and morphs the first video image ... and receives a second, video image ... of a second, different physical location and a set of goggles to display the second video image of the second, different physical location.

Thus, in addition to the combination failing to disclose all of the features of claim 1, the combination of Biocca with Lee, will provide the goggles of Yee to display the location of the mannequin, e.g., the first location corresponding to the video image captured by the camera in claim 1. However, the operator in Yee would not be concerned with sending to the location of the robot in Yee any image of the second location, e.g., of that of the operator. In addition, Biocca directed to a human based teleportal system, e.g., teleconferencing, would not be interested in mounting the camera in the first location on the human.

Accordingly, it is only after an improper application of hindsight reasoning that the examiner may fashion a colorable argument that the purported combination of references renders claim 1 obvious. However, even under *KSR*<sup>1</sup> that is not permitted.

Claims 2, 13, 16, 24, and 26 are allowable at least for the reasons discussed in claim 1.

35 U.S.C. §103

The examiner rejected claims 8-10 and 21 under 35 U.S.C. 103(a) as being unpatentable over Biocca et al. in view of Yee, as applied to claims 7 and 20 above, and further in view of Abbasi, US 6,786,863.

The examiner stated:

(Claims 8 and 21) Biocca et al. in view of Yee discloses a humanoid robot in a first location with a microphone and a camera; a set of goggles to receive the video image signal from the camera and an earphone to receive the audio signals from the microphone (figures 2 and 3). Biocca describes the teleportal system wherein the interaction between remote locations includes a first and second teleportal site, a first and second set of cameras, microphones, and goggles at different teleportal

---

<sup>1</sup> “A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning.” *KSR International Co. v. Teleflex Inc.*, \_\_ U.S. \_\_, 127 S. Ct. 1727 (Apr. 30, 2007).

Applicant : Raymond Kurzweil  
Serial No. : 10/734,618  
Filed : December 12, 2003  
Page : 11 of 13

Attorney's Docket No.: 14202-006001

locations ([0031]). Biocca in view of Yee do not describe a second robot at a different location.

However, Abbasi teaches a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending the signals to a communications network (figure 1).

Claim 8 is patentable over this combination of references because claim 8, which further limits claim 3, includes the features of a first microphone coupled to the first humanoid robot, a second humanoid robot in the second location, the second humanoid robot supporting a second microphone and a second camera; and a second set of goggles in the second location to receive the morphed first video image signals and a second earphone to receive the audio signals from the first microphone.

Applicant has shown how the combination of Biocca and Yee does not disclose all of the features of claim 1 and how that combination of references is not suggested. Further, combining these references with Abbasi is likewise not suggested, nor does the purported combination cure deficiencies in the combination of Biocca and Yee.

The examiner relies on Abbasi to teach: "a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending the signals to a communications network (figure 1)."

Abbasi does not disclose the second surrogate or the first surrogate as a mannequin or a humanoid robot having life-like features. Indeed, Abbasi describes features 50 and 55 as: "Further comprising the system are mechanical surrogates 50 and 55. The mechanical surrogates can comprise replicas of human anatomical components. The mechanical surrogates further comprise sensors and actuators needed to mimic natural human contact." Abbasi describes that the mechanical surrogates comprise components for instance, "sensory perceptions registered by the first computer 15 are reflected on the human lip surrogate attached to the second computer 25."

Accordingly, is it not taught in any combination of Biocca, Yee and Abbasi to provide a "second humanoid robot in the second location" and no combination of these references would suggest the desirability of the arrangement claimed in claim 8. Abbasi appears to merely teach replicas of human components, not a mannequin with life-like features or a second humanoid robot in the second location. Therefore, because neither Biocca nor Yee nor Abbasi alone or in combination teach a second humanoid robot in the second location, the second robot having a

Applicant : Raymond Kurzweil  
Serial No. : 10/734,618  
Filed : December 12, 2003  
Page : 12 of 13

Attorney's Docket No.: 14202-006001

second microphone and a second camera and a second set of goggles to receive the first video image signals from the first camera and a second earphone to receive the audio signals from the first microphone, claim 8 further distinguishes.

Claim 9 is allowable at least because it depends from claim 1.

The examiner rejected Claim 10 arguing that "Abbasi further teaches wherein the communications network comprises an interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (Figure 1); and Choy et al. discloses sending audio and visual signals to the headset of the user (Figure 1 and column 3, line 10-column 4, line 55)." Applicant believes that the examiner intended to refer to Biocca and not Choy. Claim 10 is allowable at least for the reasons discussed in claim 7. Alternatively, had the examiner intended to also use Choy, Applicant contends that the claim is allowable for reasons of record.

The examiner rejected claims 11, 12, 22, and 23 under 35 U.S.C. 103(a) as being unpatentable over Biocca et al. in view of Yee, as applied to claims 1 and 20 above, and further in view of Simmons, US 2003/0030397.

Biocca et al. in view of Yee discloses a humanoid robot in a first location with a microphone and a camera; a set of goggles to receive the video image signal from the camera and an earphone to receive the audio signals from the microphone (figures 2 and 3). Biocca in view of Yee does not teach explicitly where the cameras are placed in the eye socket and the microphones are placed in the ear canal. However, Simmons teaches a system of controlling a robot remotely, wherein the robot is a humanoid robot (figure 5); the robot includes an eye socket and the camera is positioned in the eye socket ([0026]); and the robot includes an ear canal wherein the microphone is positioned in the ear canal ([0016]). It would have been obvious to one of ordinary skill in the art to combine the inventions of Biocca in view of Yee with the teachings of Simmons because as Simmons teaches, placing the sensors in the position corresponding to the human sensors aligns the sensors to the perspective of the use and better reflexes the environment to the perspective of the user ([0026]).

Claim 11 for instance recites that the body includes an eye socket and the camera is positioned in the eye socket. The examiner argues that it would be "obvious to ... combine the inventions of Biocca in view of Yee with the teachings of Simmons because as Simmons teaches, placing the sensors in the position corresponding to the human sensors aligns the sensors to the perspective of the use and better reflexes the environment to the perspective of the user ([0026])." Applicant points out that in Biocca the two entities that are part of the teleportal system are humans. The examiner has failed to show why it would be suggested to combine Biocca with Yee, as argued above. Applicant also contends that the

Applicant : Raymond Kurzweil  
Serial No. : 10/734,618  
Filed : December 12, 2003  
Page : 13 of 13

Attorney's Docket No.: 14202-006001

combination of Simmons with Biocca is not suggested because the examiner's motivation "because as Simmons teaches, placing the sensors in the position corresponding to the human sensors aligns the sensors to the perspective of the use and better reflexes the environment to the perspective of the user ([0026])" appears to suggest to replace the sensors in the humans in Biocca, at least because the combination of Biocca and Yee is not suggested.

Accordingly, the claims as presented and amended are allowable over the cited art.

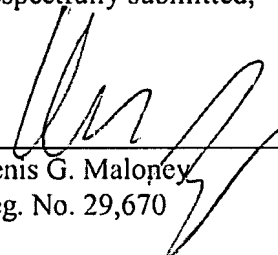
Applicant has enclosed an Information Disclosure Statement.

Please charge the Petition for Extension of Time fee and please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: \_\_\_\_\_

10/31/07

  
\_\_\_\_\_  
Denis G. Maloney  
Reg. No. 29,670

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110  
Telephone: (617) 542-5070  
Facsimile: (617) 542-8906